



## Problem of the Week

### Problem B and Solution

### On the Road Again!

#### Problem

This problem looks at the epic journeys of two young men whose fortitude knew no bounds.

- (a) In 1980, Terry Fox set out to run across Canada in order to raise money for cancer research, in what is called the Marathon of Hope. He planned to run the entire length of the Trans-Canada Highway, which is 7821 km. Terry Fox ran an average of 42 km every day, but had to stop after 143 days and 5373 km. If he had been able to complete his journey and had continued at the same pace, how many days would it have taken him to complete the remainder of his run across Canada?
- (b) In 1985, Rick Hansen, the Man in Motion, wheeled around the world in his wheelchair in order to help people understand the importance of a world without barriers for people with disabilities. Starting on March 21, 1985, and finishing on May 22, 1987, he went through 34 countries and travelled a total of 40 075 km. On average, how many kilometres did he travel on each day of his world tour?

#### Solution

- (a) The Trans-Canada Highway is 7821 km long and Terry Fox completed 5373 km. Thus,  $7821 - 5373 = 2448$  km remain. If Terry Fox travelled at 42 km per day, then since  $2448 \div 42 \approx 58.286$ , it would have taken him 59 days to complete his run across Canada.
- (b) To calculate the number of days between March 21, 1985 and May 22, 1987, we will first calculate the number of days between March 21, 1985 and March 20, 1987, inclusive, and then calculate the number of days between March 21, 1987 and May 22, 1987, inclusive.
- Since neither 1986 nor 1987 were leap years, the number of days between March 21, 1985 and March 20, 1987 is  $2 \times 365 = 730$ .
  - To calculate the number of days between March 21, 1987 and May 22, 1987, we will look at the number of days in each month. There are 11 days from March 21 to March 31. April has 30 days, and there are 22 days from May 1 to May 22. This is a total of  $11 + 30 + 22 = 63$  days.

Thus, in total, Rick Hansen travelled for  $730 + 63 = 793$  days. Since he travelled 40 075 km in total, this means he travelled on average  $40\,075 \div 793 \approx 50.5$  km per day.